

9th NSSC SCIENCE AND TECHNOLOGY BOARD

DATE: 29 May 2012

DURATION: 0930 – 1200 hours

S&T MEMBERS PRESENT:

Dr. Jack Obusek (Chair), Director, NSRDEC
BG John J. McGuiness, Commander, NSSC
COL Gaston Bathalon, Commander, USARIEM
The Honorable Gregory Bialecki, Secretary, Executive OH & ED
Mr. Patrick Larkin, JAIL
Mr. James D. Shields, DRAPER
Ms. Bonnie Biocci, MetroWest Chamber of Commerce
Mr. Arnold Boucher, S&T Board Manager
Mr. Chris Anderson, Mass High Technology Council
Mr. Peter Antoinette, NH High Technology Council
Dr. Tim Rudolph, Hanscom AFB
Dr. Theresa Baus, Naval Undersea Warfare Center
Ms. Anne Marie Dowd, MA Development
LTC Tutten, PM-FSS
Mr. David Geringer, PM-SCIE
Ms Jennifer Ball, MA Exec Office of PS&S
Mr. Doug Banks, UMass
Mr. Charlie Benway, Defense Technology Initiative

SUMMARY OF DISCUSSION WITH ACTIONS & DECISIONS:

1. AGENDA ITEM: Welcome/Introduction of New Board Members: Arnie Boucher, NSSC S&T Board Manager

a. Arnie Boucher introduced the new members of the Board: Dr. Tim Randolph, Christopher Anderson, Dr. Theresa Baus, & Peter Antoinette

2. John Stone addresses the board: John Stone, NSRDEC Office of the Chief Counsel

a. Mr. Stone, discussed the acquisition procurement process including pre-solicitation and post-solicitation. He informed the board of the government's rules on gifting, commitments, and political activities.

3. AGENDA ITEM: Opening Remarks/Update from the Chair: Dr. Obusek

a. Dr. Obusek welcomes the Board of Directors and thanks everyone for coming.

b. He reminded the board of its purpose: To facilitate the transfer of technology for the Army's needs as well as commercialization.

c. He states that we have a very robust agenda and thanks John Stone for his address to the board.

d. Dr. Obusek goes on to speak about the Mutual Values Statement and how with the information that is shared in this forum he needs the Board to go back and reenergize their communities.

e. Dr. Obusek introduces the Additive Manufacturing Institute which was established as a pilot institute with the purpose of stimulating Additive Manufacturing in the United States.

f. The Board should be looking for potential Additive Manufacturing Technology (AMT) partners for the pilot.

- We may be able to expand the definition of Additive Manufacturing Technology
- Proposals are due on 14 June 2012
- Next year, there will possibly be 12-13 in the United States
- POC is Jeff DiTullio

g. BG McGuiness told the Board of an article about a month ago on 3D Printing and what we can do as an Army

- Christopher Anderson mentioned that we need to collaborate regionally
- Peter Antoinette mentioned that there are some small businesses that are struggling to brake out and this may be a good opportunity for them.
- Doug Banks mentioned that UMass and MIT have been working together on this technology for a while now.

h. Dr. Obusek then went into further detail about the Mutual Values Statement and the Board's accomplishments.

- We need measureable/collaborative results.
- The MVS is currently NSRDEC focused but we will be looking to our NSSC partners to add to it.
- We should look to extending our reach and integration.
- The new Technology Innovation Center at UMass could facilitate innovation.
- NSRDEC has CRADAs/PLAs to assist facilitation
- We need to increase awareness, build new relationships, and leverage resources.

- NSRDEC won two 2012 SBIR Achievement Awards: Migma Systems and Rothtec
- Older SBIR opportunities may be something we look at for AMT

i. Dr. Obusek went on to update the Board on the Army Rapid Innovation Fund.

- Of the 260 White Papers submitted against the BAA, 23 proposals were solicited and 12 proposals were funded for a total of \$25,856,000.
- These were facilitated through the Board
- We can't release the names due to the awards not being final yet but these were mostly small businesses.

4. AGENDA ITEM: Update – 5th District Day: BG John McGuiness

a. BG McGuiness pointed out that we now have a good cross-section of people who work together for the advancement of everyone

b. BG McGuiness spoke of the 5th District Day.

c. BG McGuiness addressed the possibility of a BRAC affecting us. It is no secret that there is a possibility of a BRAC. There will be and need to be changes in the Army. "It is what it's going to be". What we need to do is figure out how we can collaborate to make us be as strong as we can be.

d. He went on to talk about the TECD brochure and how the TECDs came to be.

- The Army identified the top nine needs
- NSRDEC has three of the nine
- The timeframe was originally 19 POM, starting in 14 and deliverable in 16/17. As we go the majority of timeframes for them has inched closer

e. BG McGuiness then went on to discuss the other hand out that was given out at the meeting.

- It is a compilation of 30 stories from the Natick Soldier Systems Center that have made the Army's webpage.
- These are stories of people that work here and what they do. The stories give a general idea of what goes on here.
- There is a lot of talent here, including Bob Reinhart who was the Army's Journalist of the Year.
- NSSC had the most stories on the Army's page, the next closest was Ft Benning at 12, and Ft. Lewis at 10.

f. Dr. Obusek pointed out that we are honored to have 3/9 TECDs for the Army and that we are victims of the obvious: 4 Star Generals are telling us to start now.

g. Large programs of \$100M or more we won't be executing all inside the fence and are going to look for and wide for help

5. AGENDA ITEM: Technology Enabled Capability Demonstration

Force Protection – Mike Codega

- a. Force Protection seeks everything that protects the Soldier, it is not all about Personal Protective Equipment (PPE)
- b. Situational awareness is a large part of protection.
- c. We need to remember that the kit that our Soldiers have now is the best on the planet.
- d. We need to balance maximum protection with the ability to do the job.
- e. Deliverables: S&T Innovations that are close to fielded, new capabilities that there are no current requirements for, and test methodologies that allow us to execute S&T
- f. We have a consortium of lab partners and work with several RDECs
- g. The Trust Areas include what the protection costs the Soldiers ability to do their job – are we overburdening them
- h. We need to prevent non-combat related injuries.
 - We want to make the protection better and hopefully 20% lighter
 - We are looking into integrating laser protection into our eye protection
 - As for head trauma (MTBIs) we are looking at different uniforms to fight in different environments. The uniform is complicated/high-tech equipment
- i. Squad protection is improved by situational awareness.
 - Edgewood Chemical & Biological Center (ECBC) is working with us to improve squad protection
 - Fused gunfire detection will help improve force protection as well.
 - We want to integrate as much as possible which is why we are working with CERDEC to make sure everything works together.

Sustainability and Logistics Basing – Craig Rettie

- a. Calendar year 2011 bases confirmed 254 million gallons of fuel were used, more than 1,000 incidents were related to delivering fuel
- b. Water is the new fuel burden and waste containment needs to be dealt with as well.
- c. In an environment of 50-1,000 soldiers the quality of life and living standards differ greatly.
- d. The consumption are going to differ
- e. Waste and energy systems may not make sense for small bases
- f. The payoff is operational excellence and effectiveness

- g. Our goals are to: reduce fuel by 25%, water by 75%, and waste by 50%
- h. There has not been much of a conservationist mentality where fuel is concerned

Overburdened / Physical Burden – Andra Kirstens

- a. The focus is on the dismounted Soldier who carries 130+ pounds. This leads to injuries and safety concerns.
- b. In the short term, we are working to reduce the weight to less than 50% of the Soldier's body weight.
- c. Long term, we would like to reduce the weight each Soldier carries to less than 30% or their body weight.
- d. We are also looking at resupplying the Soldiers instead of having them carry supplies for days.
- e. We are trying to increase the understanding of the effects of the load on Soldiers.
- f. The Thrust Areas of this TECD are:
 - Human Performance/Injury Protection – material weight reduction; power and energy, equipment, clothing, weapons, and ammo all increase the weight.
 - Load distribution/Off loading – unmanned vehicles, networking, personal augmentation systems, load plan tools, and weight distribution are all being looked at.
- g. A question was asked: Won't we just add more weight to the Soldier load if we succeed? Andra answered that we hope not, we are measuring the pros and cons carefully what we put on the Soldier.

ACTION ITEM: Provide the contact information for the TECD leads to the BOD

6. AGENDA ITEM: Warrior Protection & Readiness Coalition: Matt Sparkes

- a. The Warrior Protection & Readiness Coalition (WPRC) is a non-profit advocacy organization that helps fill a gap and presents a united front to industry.
- b. Since it started in 2009, the WPRC has grown from 12 to more than 30 leading members of the OCIE industry with 1/3 of the coalition in New England.
- c. The focus is working with congress and people in industry.
- d. The last several years the WPRC has worked on impending funding concerns including supplemental and overseas funding, and the need to sustain funding in our current budget environment.
- e. We work with Product Managers to say here we are, here we go. We can go 0 to 60 in a very short time to get congress interested.
- f. The WPRC reached out to a think tank on where we go from here and how to maintain our progress. WPRC will continue to work on Legislative Efforts and find ways to elevate the funding issues with protective equipment and OCIE.
- g. In fiscal year 2012, WPRC will work on improving visibility for this critical program

7. AGENDA ITEM: SBIR Targeted Technologies (START) Program: Jerry Bird

- a. The goal of the START Program is to commercialize the research.
- b. START provides a \$6 million fund to support the commercialization of technologies developed under Phase II SBIR contracts – this is available for all areas.
- c. Massachusetts is 2nd in SBIR nationwide with 13% of all SBIR funding.
- d. Over 3 years: Stage 1 – 10 companies receive up to \$100K, Stage 2 – 5 most promising companies receive up to \$200K, Stage 3 – 2 companies receive a \$500K investment.
- e. The technologies need to be marketable and have to agree to keep the majority of money and people in Massachusetts.
- f. Dr. Obusek pointed out that this year is basically closed but we could get a list of SBIR from the past 3 years

ACTION ITEM: List of SBIR from past 3 years

8. AGENDA ITEM: BOLT: Ben Einstein

- a. BOLT is an innovation accelerator and a toolkit for hardware startups that initially focused on connected devices.
- b. BOLT is projected to have 50 billion devices by 2020. These devices include:
 - Consumer Electronics (iRobot Roomba)
 - Quantified Self (devices worn on the body)
 - Gaming and Education (Sifteo Cubes)
 - Connected Health (sleep manager)
- c. BOLT are the guys behind the products – entrepreneurship
- d. The accelerator programs really only help web based companies.
- e. BOLT helps to give them the tools to market.
- f. BOLT has five major stages:
 - Ideation
 - Prototyping
 - Product/market fit
 - Manufacturing
 - Commercialization
- g. BOLT's Strategic Partners include:
 - CAD/CAM
 - OEMs/Manufacturers
 - Electronics Distributors
 - Infrastructure Providers
 - CMs/SCMs
- h. BOLT does not take positions in the companies, it takes common stock.

- i. While Mr. Einstein doesn't have much experience working with the Government, Axel and Scott do.
- j. After an evaluation to assess the value of the company, BOLT offers a fixed percent of the equity and a fixed amount of the capital with each contract.
- k. BOLT tries to move faster while thinking of the shelf life of the products. They try to get products to market faster instead of protecting themselves.

9. AGENDA ITEM: Soldier Performance Center Initiative: Dr. Obusek

- a. The Soldier Performance Center (SPC) concept is a science/tactical performance center.
- b. The path forward will be difficult with the reduced budget and the Army in transition.
- c. We need to balance the Army's 'Boots on Ground' with getting the right programs and capitalizing on them.
- d. We should establish, develop, and implement but as a collaborative effort while pushing the state of the art facility.
- e. We want this to be a collaborative center for technology and science as well as information policies
- f. As a catalyst for change
 - This will create power in this region that we want in the future.
 - The SPC will focus on a specific task resulting in functional performance limited only by imagination and legal constrictions.
 - The SPC will be a hub that represents Natick and reaches out to everyone.

9. AGENDA ITEM: Executive Session Discussion/Closing Remarks:

- a. Dr. Obusek stated that there are a number of things that the Board of Directors has facilitated and with success comes growth.
- b. Dr. Obusek also stated that we need to look at the operating procedures and rules – who is appointed, in what role, and how long of a term.
- c. David Geringer from PM-SCIE stated that this is a good opportunity to see what is available.
- d. Charlie Benway from Defense Technology Initiative stated that this is a great way to get new innovation and technology. Also wondered: How do we provide information to innovation industry and connect it, get visibility out to networks? Are there synergies across the Air Force and Navy?
- e. Dr. Obusek stated that there are forums set up to get the word out and should coordinate in advance of the next meeting.
- f. LTC Tuten from PM-FSS let the Board know that on August 8th, there is an Operational Energy for the FOB at the BCIL. This is a great opportunity for maturing technology.

- g. Jennifer Ball from the MA Exec Office of Public Safety and Security stated that she works with the police, fire department, etc who are looking for people to work with for personal protection equipment.
- h. Anne Marie Dowd of MA Development stated that there is an emerging technology fund for teenage companies and there is also a business that is working on small batteries, Natick and Hanscom should connect.
- i. Pat Larkin from the John Adams Innovation Institute stated that the Board of Directors is doing a great job and is a model of the possibilities.
- j. BG McGuinness thanked the Board for attending and stated that it is important to get together to collaborate and hopes to see a lot more cross talk next time, everyone can contribute.
- k. BG McGuinness also reminded everyone that this is your/our Board of Directors – take that in and use it.
- l. The nation won't get excited about operational energy until the Army does.
- m. Keep in mind that a small unit needs to carry 7 different kinds of batteries totaling more than 400 pounds.
- n. If we cross over communications, the Department of Defense will see more and more from the Chief of Staff on Human Dimension and adopt our views on how we train Soldiers. When we are used to a certain Op-tempo, how do we bring it over to the new Army and keep up the current Op-tempo.
- o. We have had over nine senators and above presence over New England, as a result, we have much more presence and benefit from it. Everyone that is here needs to take this information out to our communities.
- p. Mr. Shields from Draper Labs said to the Navy and Air force – be careful to keep the entire DoD in New England. We want to grab their focus.
- q. COL Bathalon mentioned that the Board is focused on Human Dimension and the SPC is uncharted territory, the incoming replacement (in August) will be well versed.
- r. Doug Banks from UMass said thank you and there was enough information to engage all five campuses
- s. Chris Anderson from MA High Tech Council stated that the work here is to position New England in a positive light.
- t. Mr. Anderson fully expects the region to become a national treasure for innovative technology.
- u. The Board can bring this information out to all New England communities.
- v. There are synergies in the different DoD agencies.
- w. Peter Antoinette from NH High Tech Council said that the performance center has legs that resonate to those we influence.
- x. The communities are concerned about the DoD, there are hundreds with DoD roots and they don't want the area drained away of DoD importance.

- y. Mr. Antoinette also asks: How can we work as a region? How do we maintain true Centers of Excellence? How do we get across the border and do we ever cross the border?
- z. Dr. Rudolph from Hanscom Air Force Base commented on Mr. Shields comments of focus
- aa. Dr. Baus from the Naval Undersea Warfare Center thanked the board and said that maybe the Board wasn't cross-talking due to the robust agenda and that may be something we consider in the future.
- bb. The Soldier Performance Center is a big issue in the Navy. An admiral was interested in something similar and would be interested in bringing this back.
- cc. Dr. Obusek stated that this is a joint facility with Navy, Airmen, and Marines; we may change the name to the Warfighter Performance Center so that it can be a joint facility.
- dd. BG McGuinness stated that the DoD and Homeland Security have offices here as well. There are no real competitors due to the DoD perspective even though there is a real "jointness".

ACTION ITEM: Create a working group for the ground rules of the BOD

ACTION ITEM: Gather input from the Board of Directors and send a draft out to the BOD prior to the next meeting

ACTION ITEM: Coordinate in advance of the next meeting with Charlie Benway on the forums set up to get the word out and connect industry